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New plant associations for adults of some species of *Acmaeodera* Eschscholtz (Coleoptera: Buprestidae) occurring in the western United States

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Abstract. New adult plant host associations are given for 18 species of the genus *Acmaeodera* Eschscholtz, 1829 (Coleoptera: Buprestidae), most from the western United States.

Key words. Anthophily, jewel beetles.

Introduction

The genus *Acmaeodera* is a favorite among collectors of Buprestidae in the United States, much due to the variety and abundance of species (145 described, according to Nelson et al. 2008), their attractiveness, and their common habit of feeding on flowers, especially those in the family Asteraceae. Recently, the anthophilous propensity of the genus was discussed by Westcott and La Rue (2017), who treated 42 species that occur in the western United States. This paper includes 18 species, some of which are the same, but is not restricted to anthophily. Adult host records for *Acmaeodera* spp. are scattered throughout the more modern literature on Buprestidae. Especially notable examples are Westcott et al. (1979), who provided adult host information for 57 species; and MacRae (2006), who provided data on 43 species. Most such data, including that for larval hosts, for all species in the USA and Canada was listed in Nelson et al. (2008); however, therein have been found omissions.

Materials and Methods

The following initialisms are used for collections in which voucher specimens are deposited. All are in the USA. They may refer to more than one preceding locality under each species treatment. For institutions, names of curators who provided specimens for study are acknowledged in parentheses.

CSCA = California State Collection of Arthropods, California Department of Food and Agriculture, Sacramento (Andrew Cline).
CSUC = Colorado State University, Ft. Collins (Boris Kondratieff).
MLRC = Mike Raschko, Wilsonville, Oregon.
NVDA = Nevada Department of Agriculture, Sparks (Jeff Knight).
ODAC = Oregon Department of Agriculture, Salem
OSAC = Oregon State Collection of Arthropods, Oregon State University, Corvallis.
RACC = Richard A. Cunningham, Chino, California.

All specimens recorded in this paper as deposited in MLRC were collected by the second author. Plant names and families come from PLANTS Database (http://plants.usda.gov, last accessed 16 March 2018). Plant families are given only after the first mention of a genus.

Results

Acmaeodera amabilis Horn. Arizona: on flowers white ***Erigeron*** sp. (Asteraceae) and ***Milla biflora*** Cav. (Liliaceae), Cochise Co., Huachuca Mts., Copper Canyon, 31°21′44″N, 110°18′00″W, 1-IX-2017; on flowers ***Verbesina encelioides*** (Cav.) Benth. & Hook. f. ex A. Gray (Asteraceae), just south of Montezuma Pass, 31°21′26″N, 110°17′16″W, 1-IX-2017; on flowers ***Xanthisma*** sp. (Asteraceae), Santa Cruz Co., Pajarito Mts., Sycamore Canyon, 31°25′55″N, 111°11′18″W, 2-IX-2017, all MLRC.

Acmaeodera amplicollis LeConte. On flowers ***Sphaeralcea*** sp. (Malvaceae), Arizona, Cochise Co., Chiricahua Mts., Forest Road 42, Cave Creek Canyon, 31°53′16″N, 109°10′16″W, 3-IX-2017, MLRC.

Acmaeodera angelica Fall. Oregon: Jackson Co., Prescott Park. Roxy Ann Peak, Pacific Power, Roxy Ann Pacific Power Station, 42°20′32″N, 122°47′05″W, 30-V-2017, beaten from ***Purshia tridentata*** (Pursh) DC (Rosaceae); 23-V-2017, beaten from ***Prunus*** sp. (Rosaceae); Near Ruch, China Gulch Road, 42°15′53″N, 123°04′00″W, 11-VI-2017, beaten from dead branch ***Arctostaphylos viscida*** (Parry) (Ericaceae). Josephine Co., near Takilma, Waldo Road at Rockydale Road, 42°03′42″N, 123°37′46″W, 18-VI-2017, beaten from dead branch ***Pinus ponderosa*** Douglas ex C. Lawson (Pinaceae), all MLRC; Klamath Co., 2 mi SW Keno, Sec.12, T40S, R7E, 23-VII-70, collected on ***Ceanothus velutinus*** Douglas ex Hook. (Rhamnaceae), R. L. Westcott, ODAC. This common buprestid has been reared from several species in three genera of hardwoods (Nelson et al. 2008), and clearly the specimen herein from pine represents an incidental resting place.

Acmaeodera condita Barr. Collected in Nevada on ***Ceanothus*** sp., Clark Co., Kyle Canyon, 7000–7200′, 16-VI-83, S. A. Steffen, NVDA.

Acmaeodera connexa LeConte. Beaten from ***Ceanothus cuneatus*** (Hook.) Nutt., Oregon, Josephine Co., near Takilma, Waldo Road at Rockydale Road, 42°03′42″N, 123°37′46″W, 18-VI-2017, MLRC.

Acmaeodera conoidea Fall. Collected on flowers of ***Penstemon*** sp. (Scrophulareaceae), New Mexico, Colfax Co., Trinchera Creek, 6200′, Heartland Rd., 0.2 mi NW Co. Rd. 35, 36.971933°, –104.078288°, 9-VII-2016, B. Kondratieff, CSUC.

Acmaeodera delumbis Horn, 1894. Adults of this species are frequently collected on legume shrubs (Westcott et al. 1979; MacRae 2006). One specimen was taken on an apical stem of ***Ephedra*** sp. (Ephedraceae), ARIZONA, Cochise Co., Dragoon Mts., lower Cochise Stronghold FR 84, 1460 m, 20.VII.2010, D. La Rue, RACC. Surely this represents only a resting place and is not indicative of a larval host, both of those known being legumes.

Acmaeodera dolorosa dolorosa Fall. Oregon: Josephine Co., near Takilma, Waldo Road at Rockydale Road, 42°03′42″N, 123°37′46″W, 18-VI-2017, beaten from ***Ceanothus cuneatus***, MLRC. Jackson Co., 2 mi S Phoenix, 25-VI-70, on variety of ***Cercocarpus montanus*** Raf. (Rosaceae), M. L. Raschko, ODAC; Prescott Park, Roxy Ann Peak, Pacific Power, Roxy Ann Pacific Power Station, 42°20′32″N, 122°47′05″W, 30-V-2017, beaten from ***Purshia tridentata***, MLRC.

Acmaeodera gibbula LeConte. Beaten from dead limbs of ***Juniperus*** sp., Arizona, Santa Cruz Co., Pajarito Mts., Sycamore Canyon, 31°25′55″N, 111°11′18″W, 2-IX-2017, MLRC. Several specimens were beaten from a totally dead juniper, others from dead branches of three recorded larval host genera at the same collecting site; all larval hosts are legumes, except willow (Nelson et al. 2008). This common and widespread beetle is well known as a "twig-sitter," and even though multiple specimens were taken on the juniper, that it, a conifer, represents a larval host seems to us a stretch.

Acmaeodera hepburnii LeConte. Oregon, Jackson Co.: on ***Ceanothus cuneatus***, 4 mi S Ruch, 13-VII-68, R. L. Westcott, OSAC; on flowers ***Horkelia*** sp. (Rosaceae) and ***Madia elegans*** D.Don ex Lindl. (Asteraceae), Prescott Park, Roxy Ann Peak, Pacific Power, Roxy Ann Pacific Power Station, 42°20′32″N, 122°47′05″W, 23-V-2017, MLRC.

Acmaeodera idahoensis Barr. Taken on flowers of ***Erigeron linearis*** (Hook.) Piper and ***Eriophyllum lanatum*** (Pursh) Forbes (Asteraceae), Oregon, Wasco Co., Hwy. 197, Butler Canyon S of Tygh Ridge Summit, 45°17′51″N, 121°10′12″W, 30-V-2018, MLRC. This brings to 13 the number of plant genera

represented in floral associations of this beetle, eight of which are in the family Asteraceae (Nelson et al. 2008).

Acmaeodera labyrinthica Fall. On flowers ***Eriophyllum confertiflorum*** (DC.) A. Gray, California, Riverside Co., N of Upland, mouth of Stoddard Canyon, 23/30-V-1981, G. H. Nelson, CSCA.

Acmaeodera nexa Fall. Oregon, Jackson Co., Prescott Park, Roxy Ann Peak, Pacific Power, Roxy Ann Pacific Power Station, 42°20′32″N, 122°47′05″W, 23-V-2017, beaten from ***Prunus*** sp., and 30-V-2017, beaten from ***Purshia tridentata***, MLRC.

Acmaeodera parkeri Cazier. On flowers ***Evolvulus arizonicus*** A. Gray (Convolvulaceae), Arizona, Santa Cruz Co., Pajarito Mts., Sycamore Canyon, 31°25′55″N, 111°11′18″W, 02-IX-2017, MLRC.

Acmaeodera retifera LeConte. Oregon, Jackson Co.: beaten from dead branch ***Arctostaphylos viscida***, near Ruch, China Gulch Road, 42°15′53″N, 123°04′00″W, 11-VI-2017; Prescott Park, Roxy Ann Peak, Pacific Power, Roxy Ann Pacific Power Station, 42°20′32″N, 122°47′05″W, on flowers ***Madia elegans***, 23-V-2017, and beaten from ***Purshia tridentata,*** 30-V-2017, all MLRC.

Acmaeodera rubronotata Laporte & Gory. On flowers ***Xanthisma*** sp., Arizona, Santa Cruz Co., Pajarito Mts., Sycamore Canyon, 31°25′55″N, 111°11′18″W, 02-IX-2017, MLRC.

Acmaeodera scalaris Mannerheim. Arizona, Santa Cruz Co., Pajarito Mts., Sycamore Canyon: on flowers ***Xanthisma*** sp., 31°25′55″N, 111°11′18″W, 02-IX-2017; on flowers of ***Pseudognaphalium*** sp. (Asteraceae), AZ 289, Mile 7, Calabasas Group Camp, 31°23′20″N, 111°02′59″W, 02-IX-2017; Cochise Co.: on flower ***Evolvulus arizonicus***, near Benson, Barrel Cactus Ridge, 31°57′19″N, 110°20′41″W, 04-IX-2017; on flowers ***Heterotheca subaxillaris*** (Lam.) Britton & Rusby (Asteraceae), Stateline Road, just W Arizona-New Mexico border, 31°50′28″N, 109°02′56″W, 03-IX-2017, all MLRC.

Acmaeodera solitaria Kerremans. Arizona, Cochise Co.: on flowers ***Sphaeralcea*** sp., Chiricahua Mts., Forest Road 42, Cave Creek Canyon, 31°53′16″N, 109°10′16″W, 03-IX-2017; beaten from ***Quercus*** sp. (Fagaceae), Huachuca Mts., Copper Canyon, 31°21′44″N, 110°18′00″W, 01-IX-2017; on flowers ***Evolvulus arizonicus*** and ***Xanthisma*** sp., Santa Cruz Co., Pajarito Mts., Sycamore Canyon, 31°25′55″N, 111°11′18″W, 02-IX-2017, all MLRC.

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